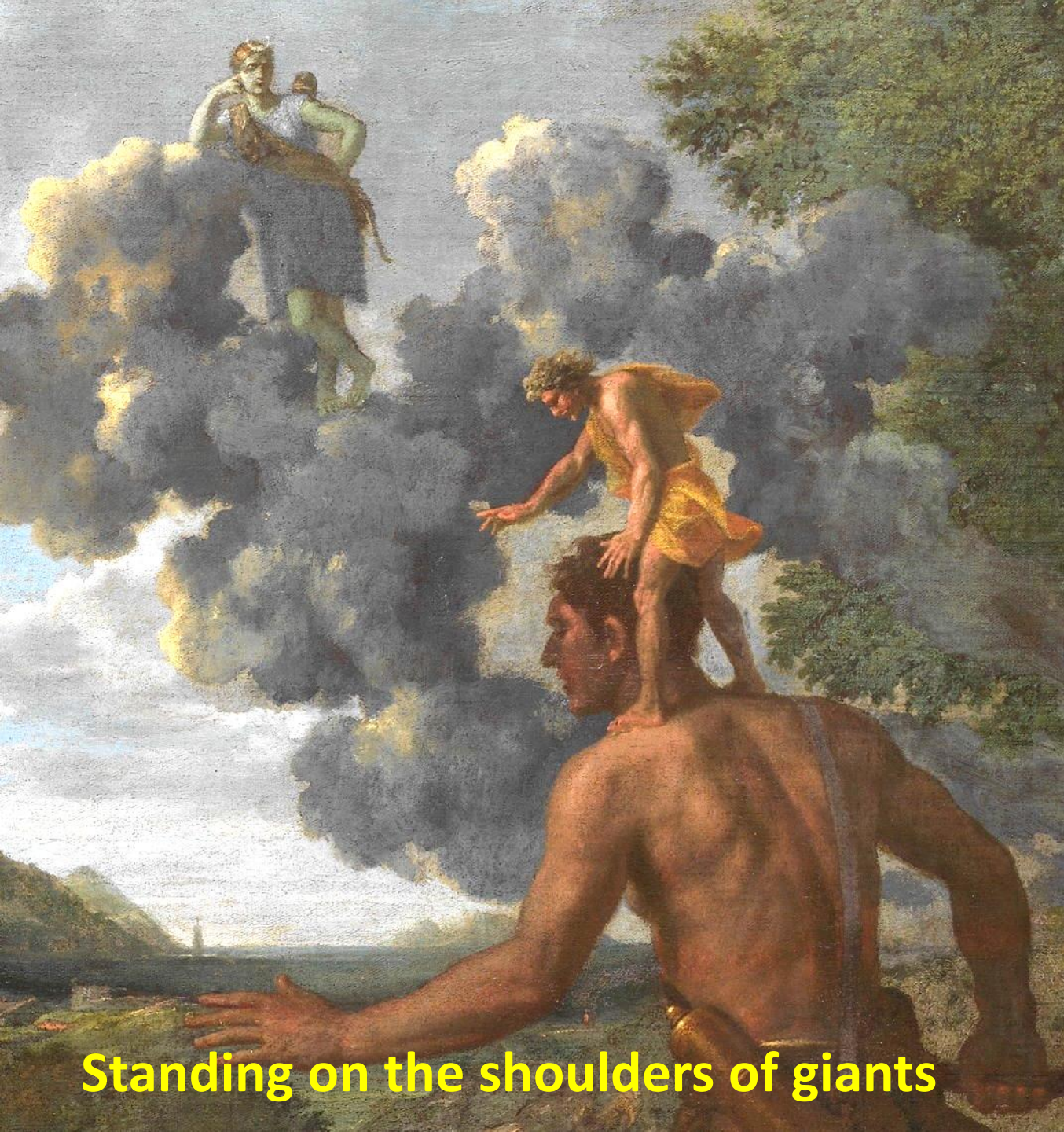


Striving for research excellence



Prof. Dr. Johan Van Lint, MD PhD
Research Director, Leuven Cancer Institute (LKI)
Johan.Vanlint@kuleuven.be



Standing on the shoulders of giants



Team work of many colleagues

KU Leuven's results in striving for research excellence



World: 45
Europe: 22
EU: 16

Times Higher Education Rankings



World: 42
Europe: 12
EU: 3



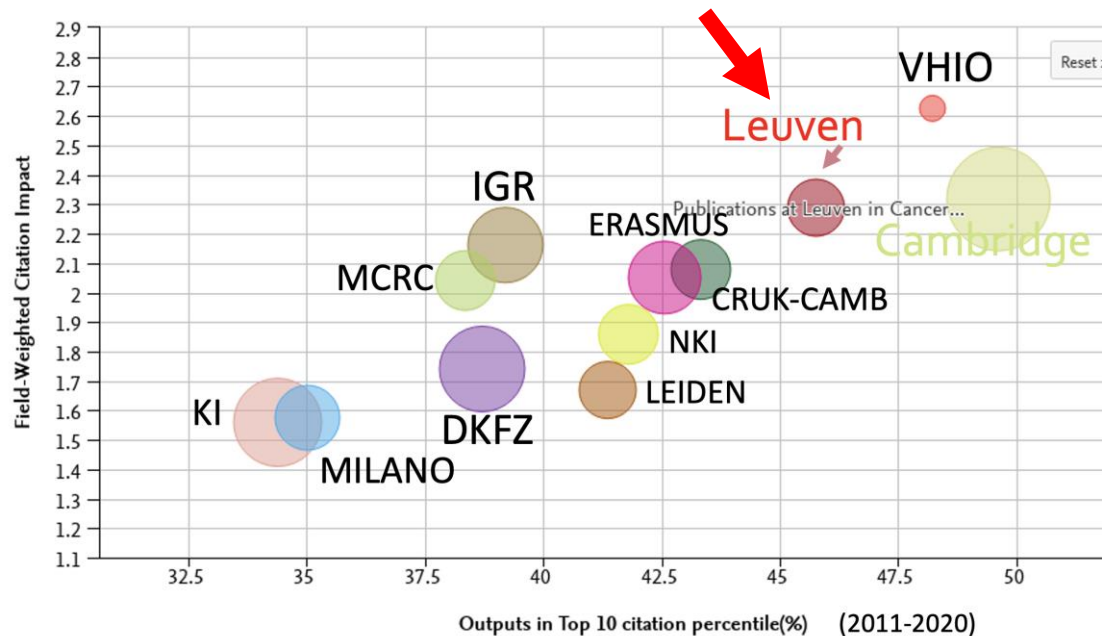
World: 7
Europe: 1
EU: 1

Leuven (LKI) performs at top level amongst other top cancer research centers

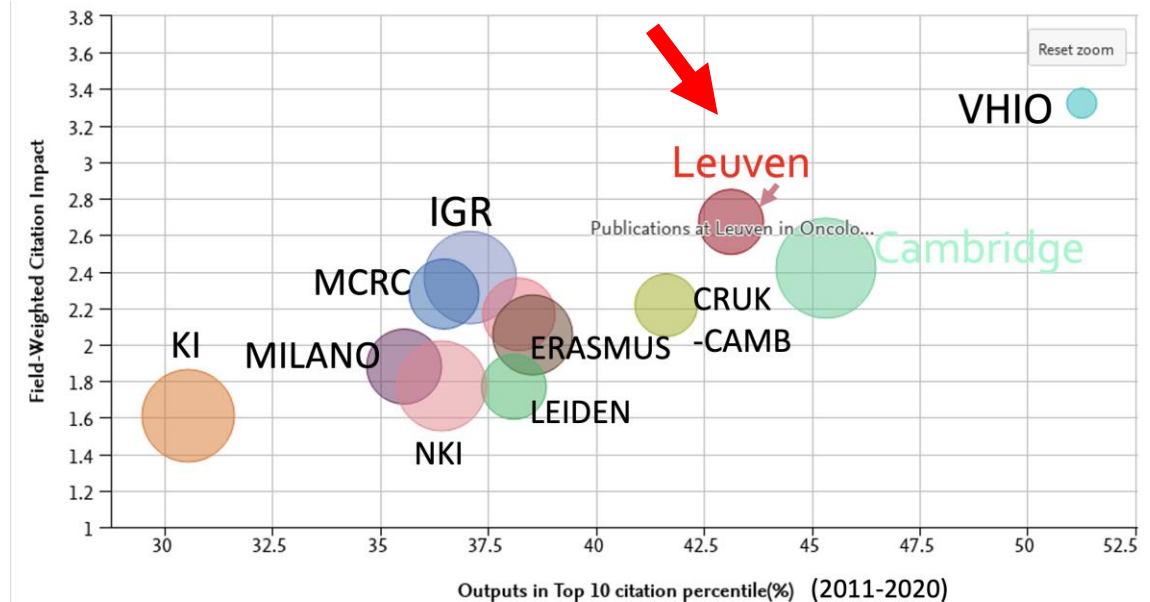


SciVal
ELSEVIER

Fundamental & translational cancer research



Clinical cancer research



Vall d'Hebron (VHIO) – Cambridge Univ - Leuven – Gustave Roussy (IGR) – CRUK Cambridge – Erasmus R'dam – Manchester (MCRC) – Neth. Cancer Inst (NKI) – Heidelberg (DKFZ) - Leiden – IRCCS Milan – Karolinska (KI)



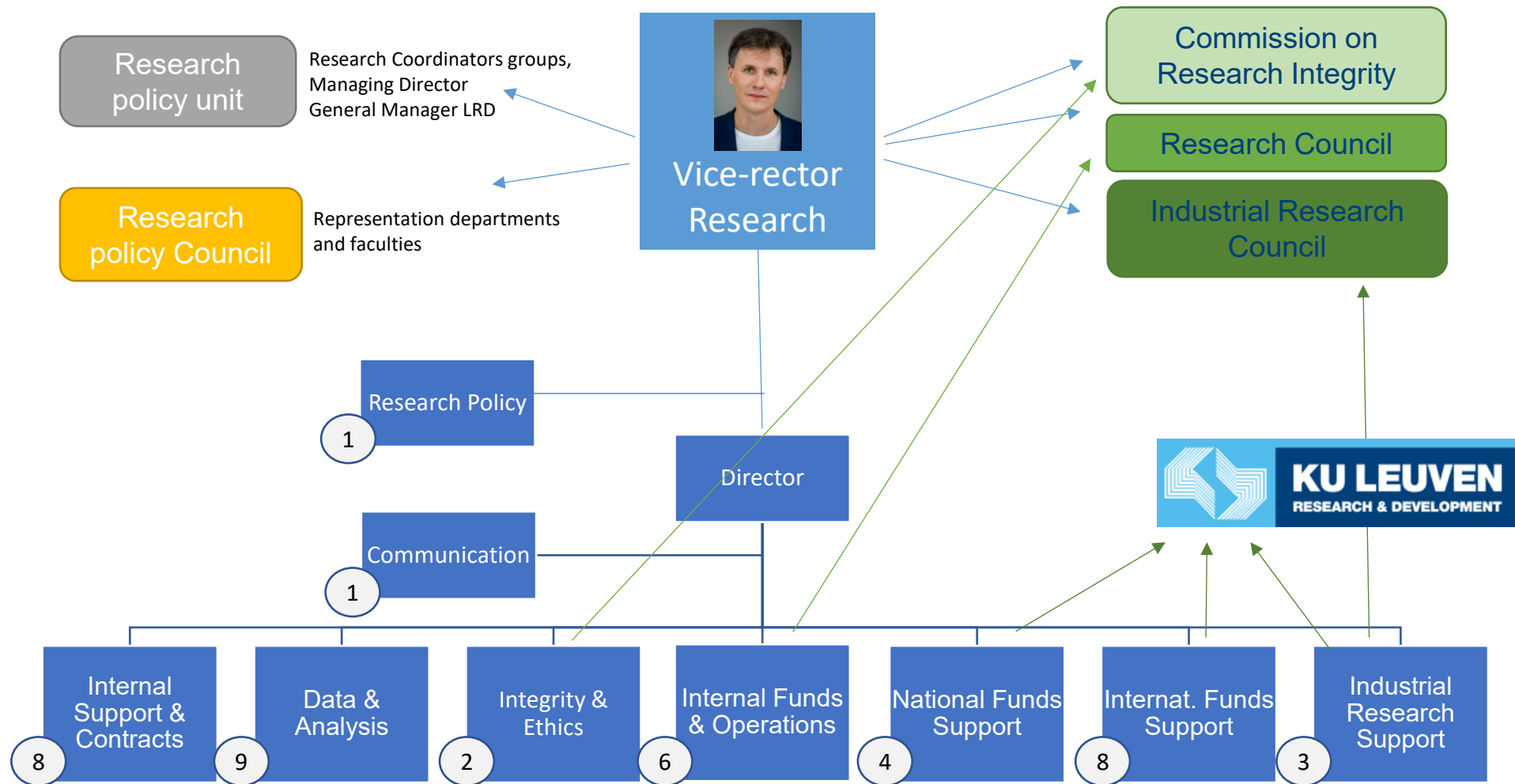
Comprehensive research strategy

- entire university
- institute level
- department level
- implementational freedom
- (general principles)

*Zeus – King of the gods who granted each god his/her domain **autonomy** yet led them toward a **common purpose**.*



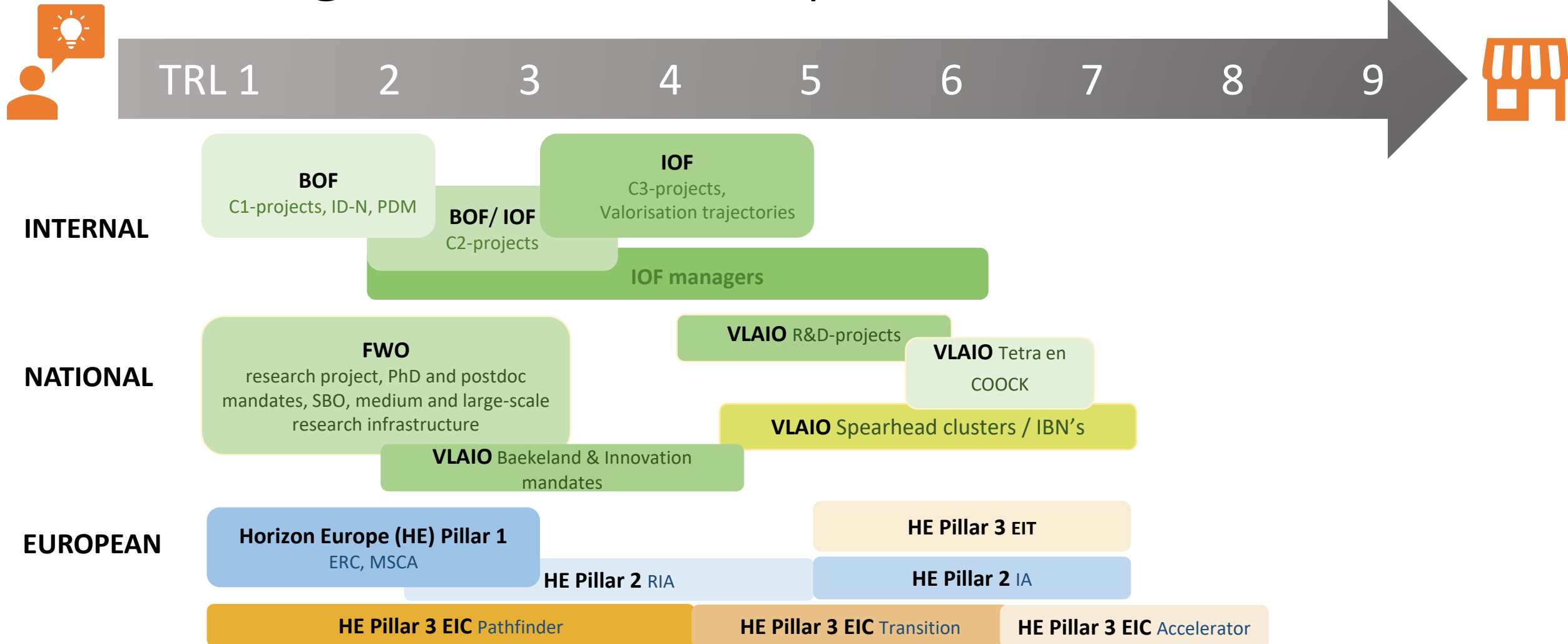
Research Coordination Office (DOC)



Entire research path from idea to impact is strongly supported by central services



Funding the innovation process



**Interdisciplinary
research –
Breaking down
silo's**

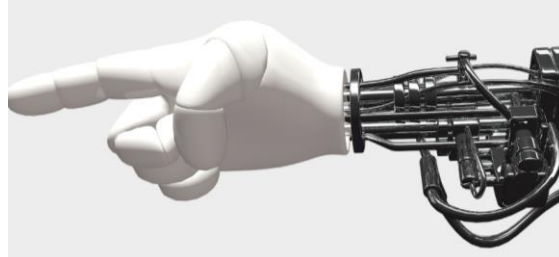


The Muses – inspirers of arts and sciences, often depicted together in conversation, creating harmony and synergy across their distinct fields

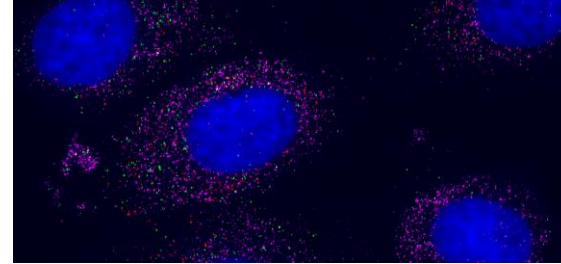
KU Leuven Institutes



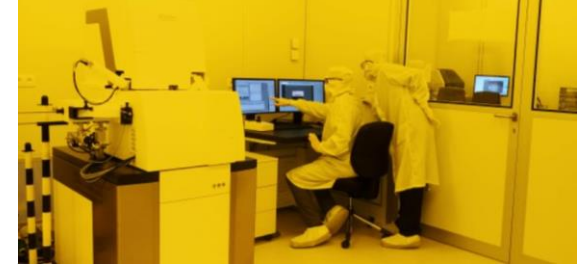
**LKI – KU LEUVEN CANCER
INSTITUTE**



**LEUVEN.AI – KU LEUVEN
INSTITUTE FOR ARTIFICIAL
INTELLIGENCE**



**LISCO – KU LEUVEN
INSTITUTE FOR
SINGLE-CELL OMICS**



**LIMNI-KU LEUVEN
INSTITUTE FOR MICRO-
AND NANOSCALE
INTEGRATION**



**LBI – KU LEUVEN BRAIN
INSTITUTE**



**DIGISOC - KU LEUVEN
DIGITAL SOCIETY
INSTITUTE**



**ISI HEALTH - KU LEUVEN
INSTITUTE OF PHYSICS-
BASED MODELLING FOR
IN SILICO HEALTH**



**LEUVEN.AM - KU LEUVEN
INSTITUTE FOR ADDITIVE
MANUFACTURING**

The LKI: integrating all Leuven forces for CANCER MEDICINE, CANCER RESEARCH, CANCER EDUCATION



> 200
research groups



> 1000/y
research papers

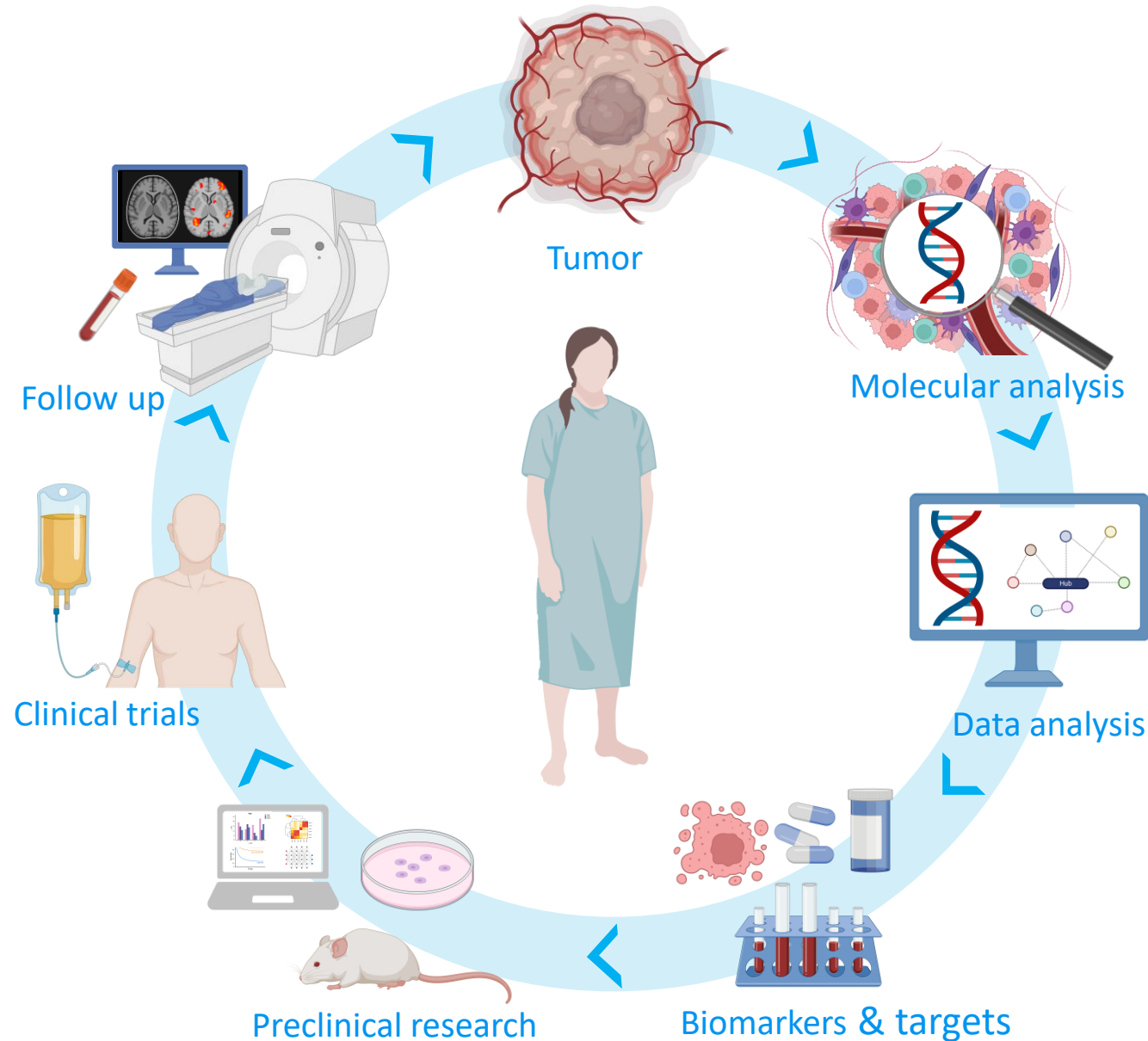
> 200/y
with IF>10

**Bench to bedside –
Integration of clinic
and research**

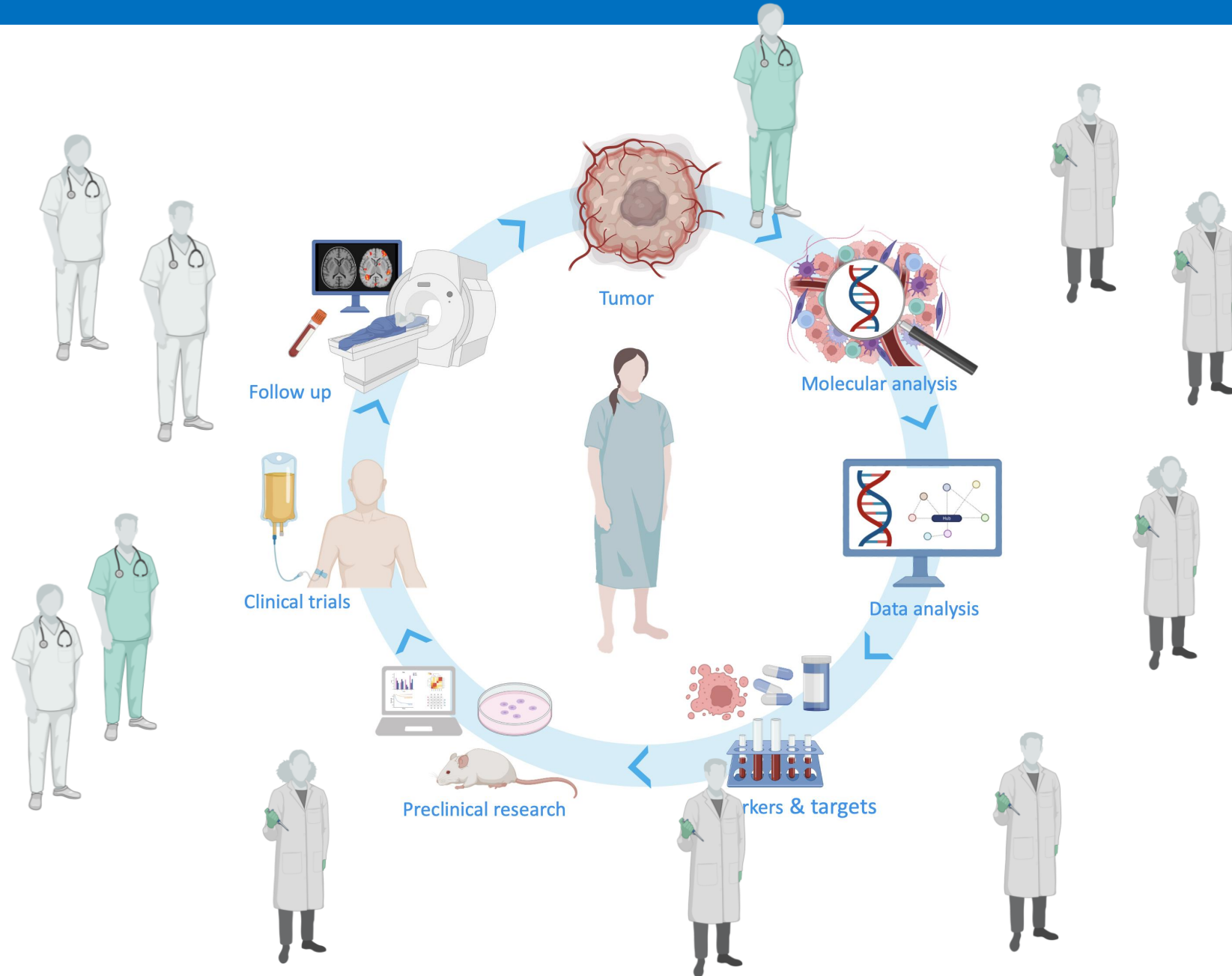


*Asclepius – god of medicine and
healing, personifying the union
of knowledge and care*

The patient is central in our vision of the bench to bed (& back) research cycle



Stimulating the bench to bed (and back) cycle @ LKI – bringing brains together!



Joining clinician & basic scientist brains in LKI Focus Groups

for multidisciplinary research @ LKI

<https://www.kuleuven.be/kankerinstituut/en/research/focusgroups>

LEUVEN
CANCER INSTITUTE



Brain



Head & Neck



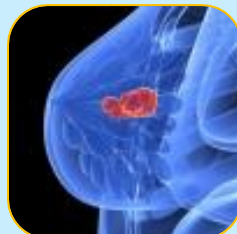
Melanoma



Gyneco



Lung



Breast



Hemato



Pancreas



Bladder &
Kidney



Prostate



Colorectal



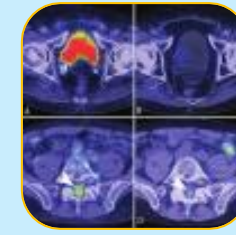
Cancer &
the brain



Model systems



Drug discovery



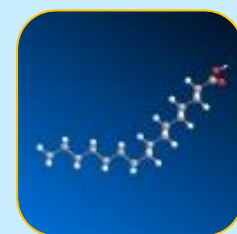
Diagnostic
imaging



Physical activity
& Exercise in Oncology



Metabolism



Lipid metabolism



Tumor
immunology



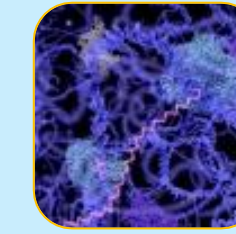
Cancer
Data science



Optical imaging
& nanotherapies



Liquid biopsies



Epigenetics

Pushing frontiers –
Attention for rare
cancers &
pioneering trials
with multi-omics
science engrafted
on them



***Hercules** – hero famed for his
twelve labors, taking on
daunting challenges*

LKI Multi-tumor clinical trials board

single point of contact for clinical trials with
agents affecting multiple tumor types



Jeroen Dekervel
GI Oncology
Hepatobiliary, Pancreas



Sabine Tejpar
GI Oncology
Colorectal



Chris Verslype
GI Oncology
Hepatobiliary, Pancreas



Filip Van Herpe
GI Oncology



Baki Topal
Abdominal Surgical Oncology
Hepatobiliary, Pancreas



Isabelle Vanden Bempt
Molecular Diagnostics
Next gen sequencing



Heidi Sterckx
Head
Clinical Trial Center



Christophe Doms
Respiratory Oncology



Els Wauters
Respiratory Oncology



Peter Vandenberghe
Hematology



Toon Van Gorp
Gyneco-oncology



Els Van Nieuwenhuysen
Gyneco-oncology



Sherida (Feng) Woei-Ajin
Gyneco-oncology



Patrick Schöffski
General Medical Oncology
Rare cancers
Phase 0/1 Trials



Hans Wildiers
Breast Cancer



Paul Clement
Head & Neck Cancers
Brain tumours



Benoit
Beuselinck
Renal, breast,
prostate cancer



Herlinde Dumez
General Medical Oncology
Rare cancers
Phase 1 Trials



Oliver Bechter
Melanoma



Johan Van Lint
Coordinator Translational
Cancer Research LKI



Evy Lobbestaël
Operational Manager
LKI

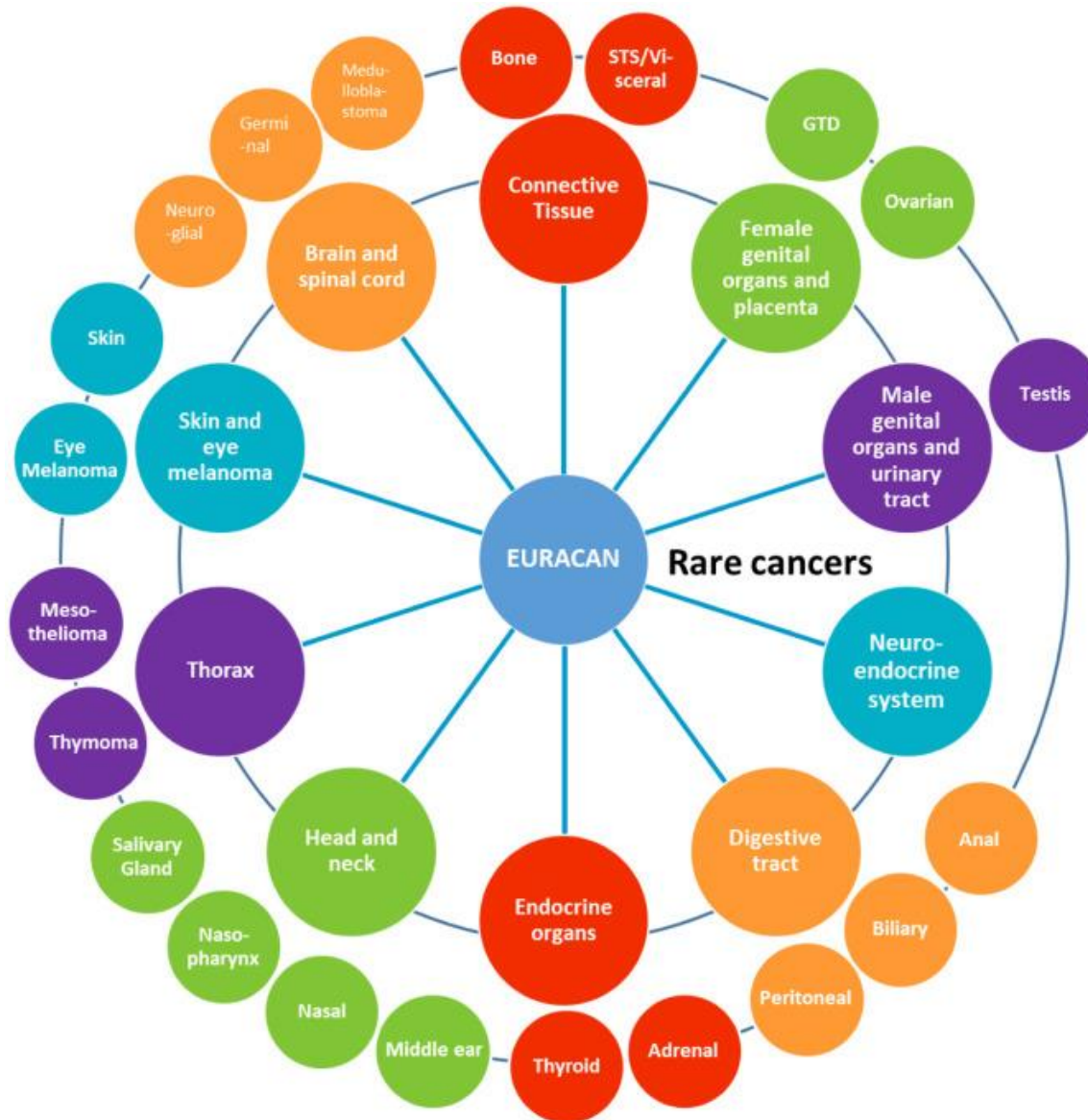
More detailed info on the disease areas of these clinicians: <https://www.uzleuven.be>

Single point of contact e-mail: lki_multi_tumor_studies_project@uzleuven.be

The UZ Leuven Clinical Trial Center (CTC):
A hub for support to clinical trialists regarding legal, contractual, ethical, financial, data protection etc matters



Leuven has a long tradition as reference center for rare cancers



GLIOMATCH



**Talent
development &
education – The
next generation**



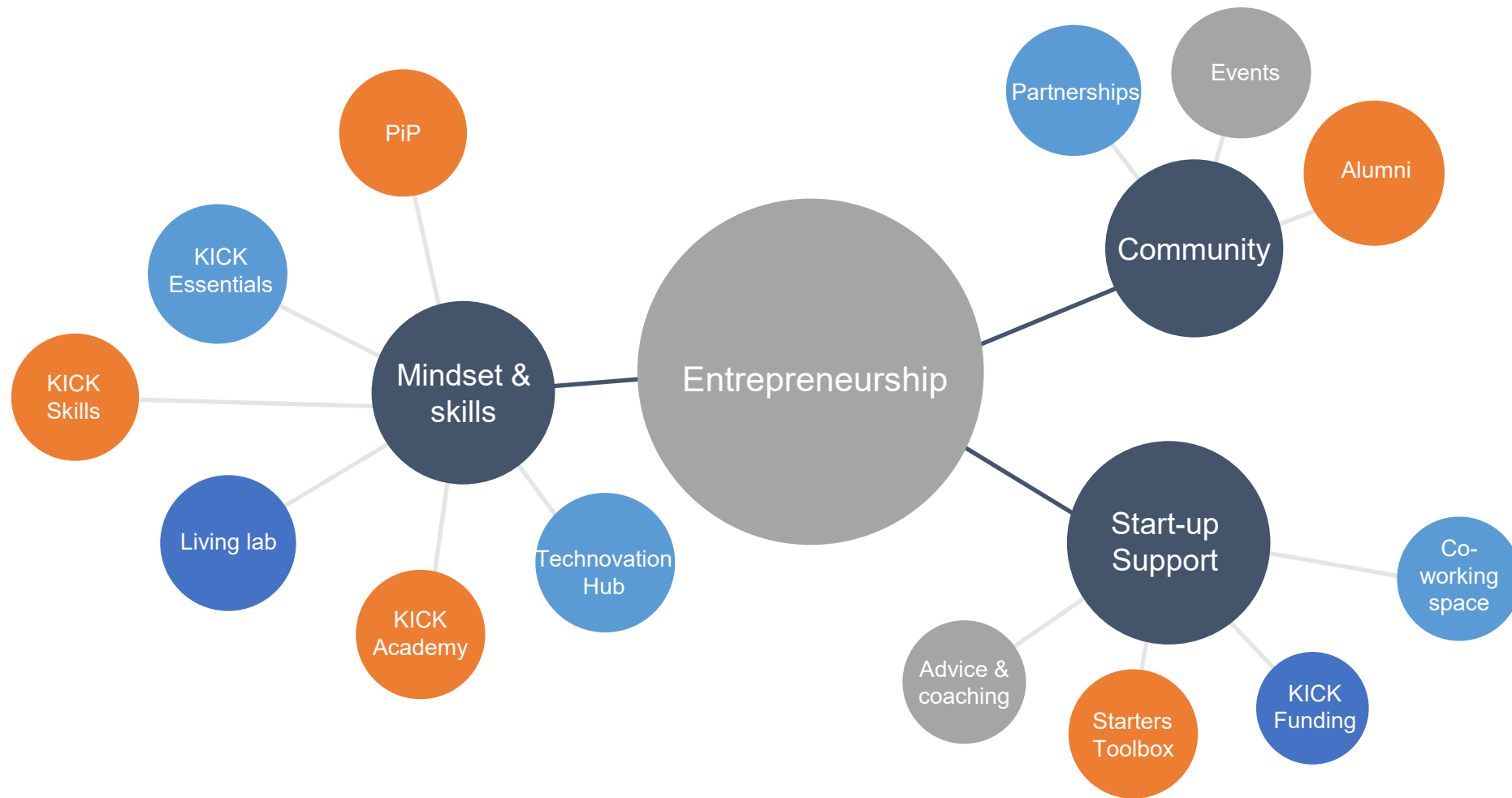
*Chiron – the wise Centaur
famed as a mentor of
heroes such as Achilles,
Asklepios and others*

Students are involved in research from very early on

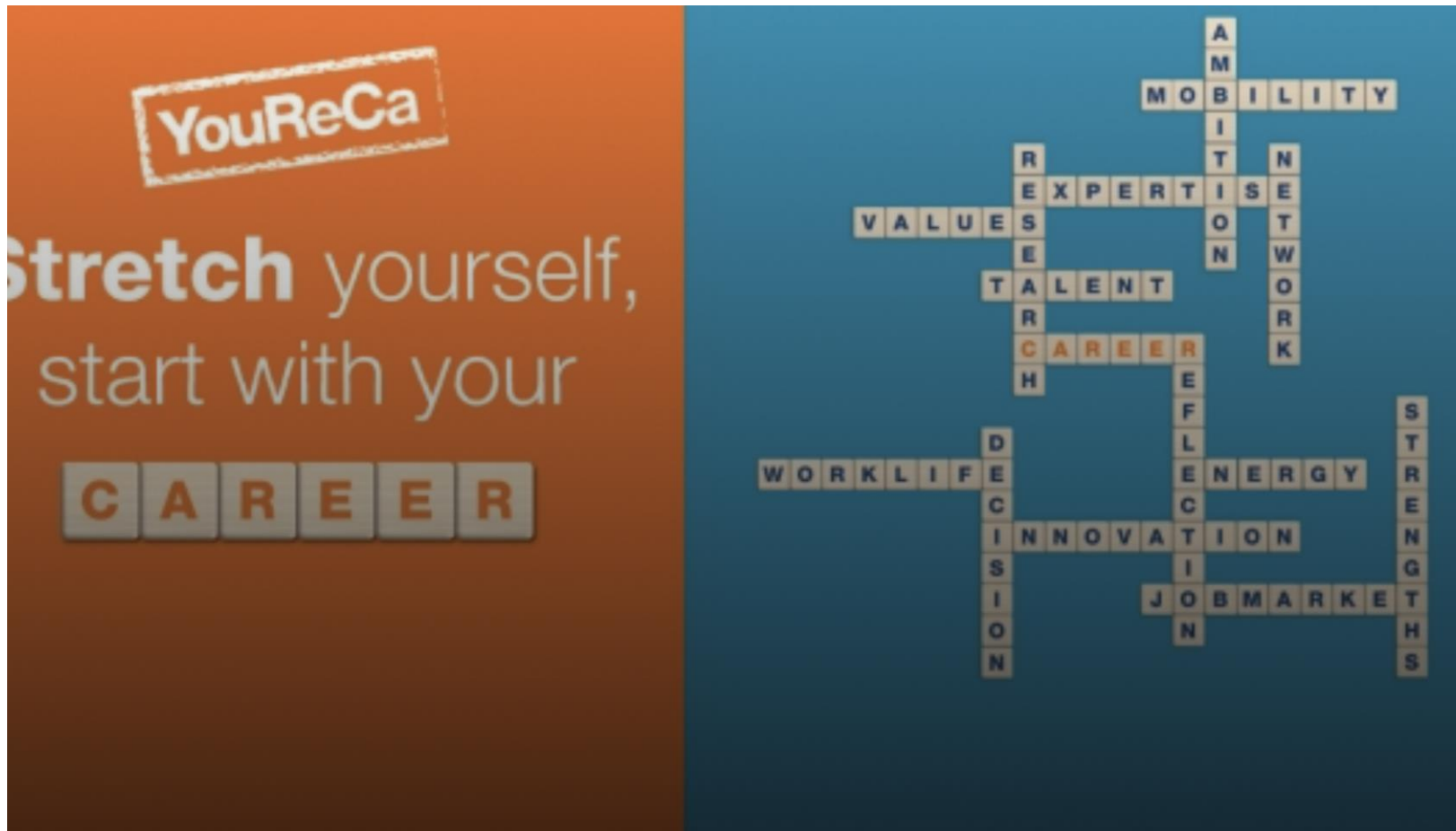


KU Leuven KICK

Promoting student-entrepreneurship



YouReCa – creating an environment to facilitate the establishment of a Young Research Career



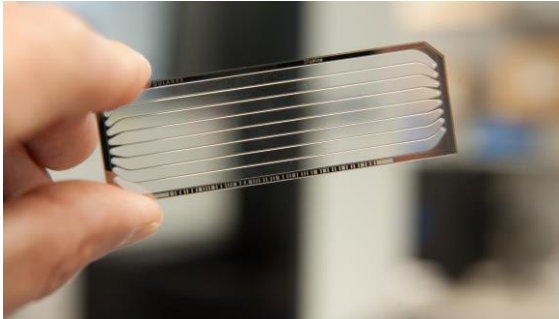
For all PhD researchers, postdocs and tenure track professors

Investing in
research
infrastructure



*Hephaestos – god of
blacksmiths & craftsmen –
forging the weapons and tools
for heroes and gods*

KU Leuven Core Facilities



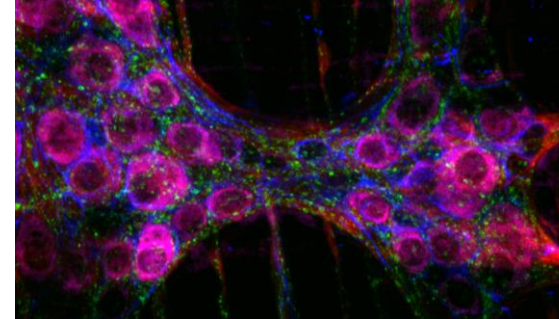
GENOMICS CORE

- DNA and RNA sequencing technology made accessible: Genomics Core supports experimental design library prep, sequencing and bioinformatic analysis for both internal and external researchers



XCT

- KU Leuven X-ray Computed Tomography Core Facility
- Manages micro- and nano-focus X-ray computed tomography devices and facilitates research into the internal 3D structure of materials and biological tissues



CIC

- KU Leuven Cell and Tissue Imaging Cluster Core Facility
- Network of researchers who use microscopic techniques to investigate biomedical and biological questions
- Provides access to high-tech imaging systems and training programmes at various levels



LIPOMETRIX

- Lipidomics Core Facility
- Technology platform offering lipidomics services to academic and industrial partners
- Offers collaborative customisation and is committed to continuous technological innovation and advanced data analysis



CANCER EXPERTISE



MIRC



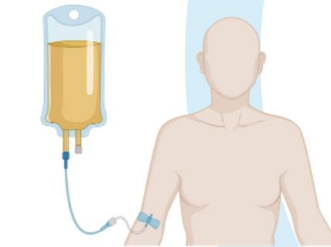
KU Leuven
Institute for
Single Cell
Omics



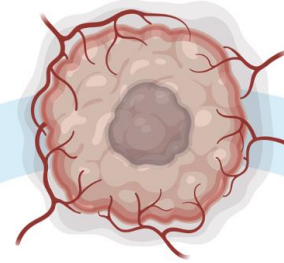
SINGLE CELL &
(SPATIAL) MULTIOMICS



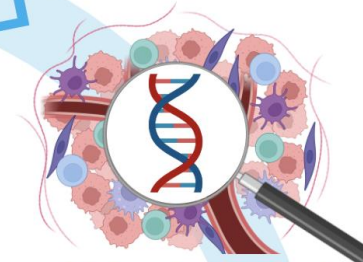
Follow up



Clinical trials



Tumor



Molecular analysis



Data analysis



DATA SCIENCE



CD3

CENTRE FOR
DRUG DESIGN
AND DISCOVERY

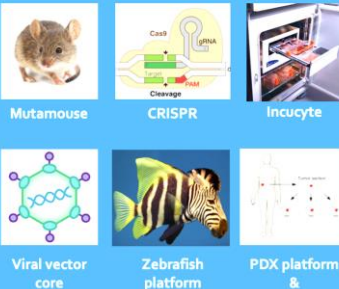


Biomarkers & targets

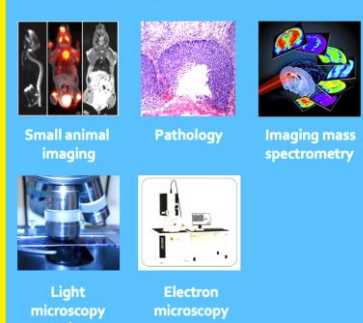


Preclinical research

Functional analysis platforms



Imaging platforms



Philanthropy –
fueling innovation
through giving



***Prometheus – The Titan**
who gifted fire to humanity,
an act of benevolence that
advanced civilization.*

“Opening the Future”: philanthropic support by wealthy KU Leuven donors



Governing Board “Opening the Future”



Opening
the future

KU Leuven Endowed Chairs – support to projects by a family, a society, a company....

YOUR ENDOWED CHAIR AT KU LEUVEN

Become a partner in change



Approx. 60 chairs connected
to cancer research

Initiative from:

- Patients
- Relatives
- Companies (given without commercial benefit)
- Societies
- -

FIKO – The LKI Fund for Innovative Cancer Research



**Translating
research to impact**
– Tech transfer &
valorisation of
research results



*Hermes – messenger and
patron of commerce*

Leuven Research & Development (LRD): our tech transfer (and more!) office

Research collaboration with industry

- Create awareness and transfer knowledge
- Provide advice
- Negotiate & follow-up contracts
- Manage research files financially
- Offer administrative support
- Prepare legal documents

Intellectual property

- Create awareness and transfer knowledge
- Assess the feasibility, patentability and market potential of an invention
- Determine a protection strategy
- Draft and file a patent application
- Follow up on patent procedures and costs
- Negotiate and draft NDAs, MTAs and license agreements
- Find partners



Spin-off

- Develop business plans
- Put together a competent team
- Find investors
- Find infrastructure
- Manage growth of spin-offs
- Promote entrepreneurship
- Stimulate regional development, networks and clusters

Embedded **innovation managers** support valorisation of cancer research

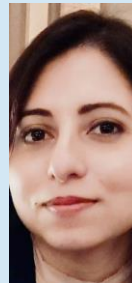


Bart De Greef

Clin-IC: Medtech Solutions for Patients

Medtech solutions • patient monitoring • diagnostics • disease treatment and prevention • medical need

[contact](#) - [website](#) - [cv](#)



Shinjini Mukherjee

Single-cell and spatial multi-omics for biomedicine

spatial multi-omics • single-cell multi-omics • microfluidics • higher order biomarkers • human cell atlas in health and disease

[contact](#) - [website](#) - [cv](#)



Nick Geukens

PharmAbs - The KU Leuven Antibody Center

therapeutic antibody discovery & development • immunoassay design & validation • point-of-care diagnostics

[contact](#) - [website](#) - [cv](#)



Patrick Chaltin

CD3 - the centre for Drug Design and Discovery - discovering new drugs based on innovative research

drug discovery • small molecules • medicinal chemistry

[contact](#) - [website](#) - [cv](#)



Tom Broeckx

Genomic Medicine: Translation of whole genome analyses to health genomics

genomics • human genetics • liquid biopsy • genetic diagnosis

[contact](#) - [website](#) - [cv](#)



Babs Weyn

Medical Imaging Research Center

(Molecular) Imaging

[contact](#) - [website](#) - [cv](#)



Veronique Daniëls

Parkinson's disease drug discovery & Leuven Viral Vector Core

viral vector technology • target validation • Parkinson's disease modelling & drug discovery • Leuven Viral Vector Core

[contact](#) - [website](#) - [cv](#)



Christopher Cawthorne

Nuclear medicine, molecular imaging and radiopharmaceutical research

molecular imaging • radiopharmaceuticals • image processing • drug development • Good Manufacturing Practice

[contact](#) - [website](#) - [cv](#)



Frauke Christ

Molecular Virology and Drug Discovery

target identification and validation • drug discovery • PPI (SMPPiIs) • HIV, leukemia • cystic fibrosis

[contact](#) - [website](#) - [cv](#)



Francesco Dal Dosso

Integrated Diagnostic and Life Science Research Tools

biosensors • medical diagnostics • Life Science Research Tools • point-of-care diagnostics • personalized medicine

[contact](#) - [website](#) - [cv](#)



Karin Thevissen

Centre of Microbial and Plant Genetics

drug screening • antimicrobial, antibiofilm & anti-apoptotic compounds • mode of action • mitochondrial function

[contact](#) - [website](#) - [cv](#)

More details: https://research.kuleuven.be/en/collaborate/science_business/iof/innovation-managers/index

Valorization @ KU Leuven

- **Supported by Leuven Research and Development (LRD): bridge between science & society**

Some facts:

- One of the first university technology transfer offices in Europe (1972)
- Team of 140 staff members (2025)
- Member of TenU
- Most innovative university in Europe for many (2016-2019)

One year of research valorization: 2024



A regional innovation ecosystem

- Bringing together city, industry and university, and civil society to foster innovation



Demeter – goddess of harvest and growth, cultivating seeds into fruitful outcome

Research labs

KU LEUVEN

Education



UZ
LEUVEN

Clinical activities

LEUVEN
CANCER INSTITUTE





BUSINESS

**LOCAL
GOVERNMENT**

**KNOWLEDGE
INSTITUTIONS**

**CIVIL
SOCIETY**

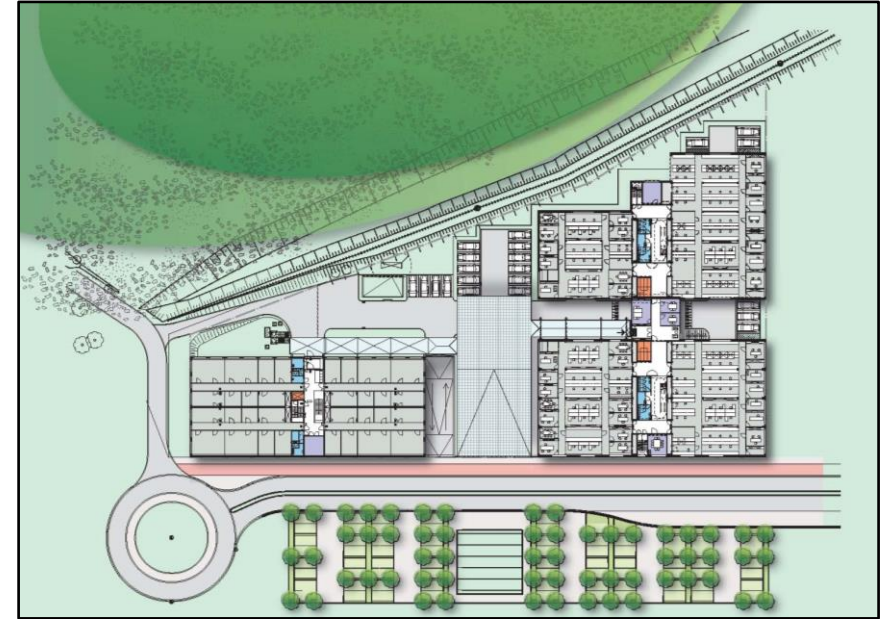


**LEUVEN
MINDGATE**



Bio-Incubator Leuven facilities

- Joint initiatif (2006) KU Leuven – VIB – LSRP
- BI1, 2 & 3: each 3.000m², 125m²/unit
- BI4 & 5: 7.800m², +/- 270m²/unit
- UCB-hub on Arenberg Science Park
- BI6: concept phase started
- Full service lease
- Interactions KU Leuven, imec, UZ, VIB, ...



International benchmark

Recent report by Dealroom on Science and Startup hubs



Per capita lens

Science Hubs

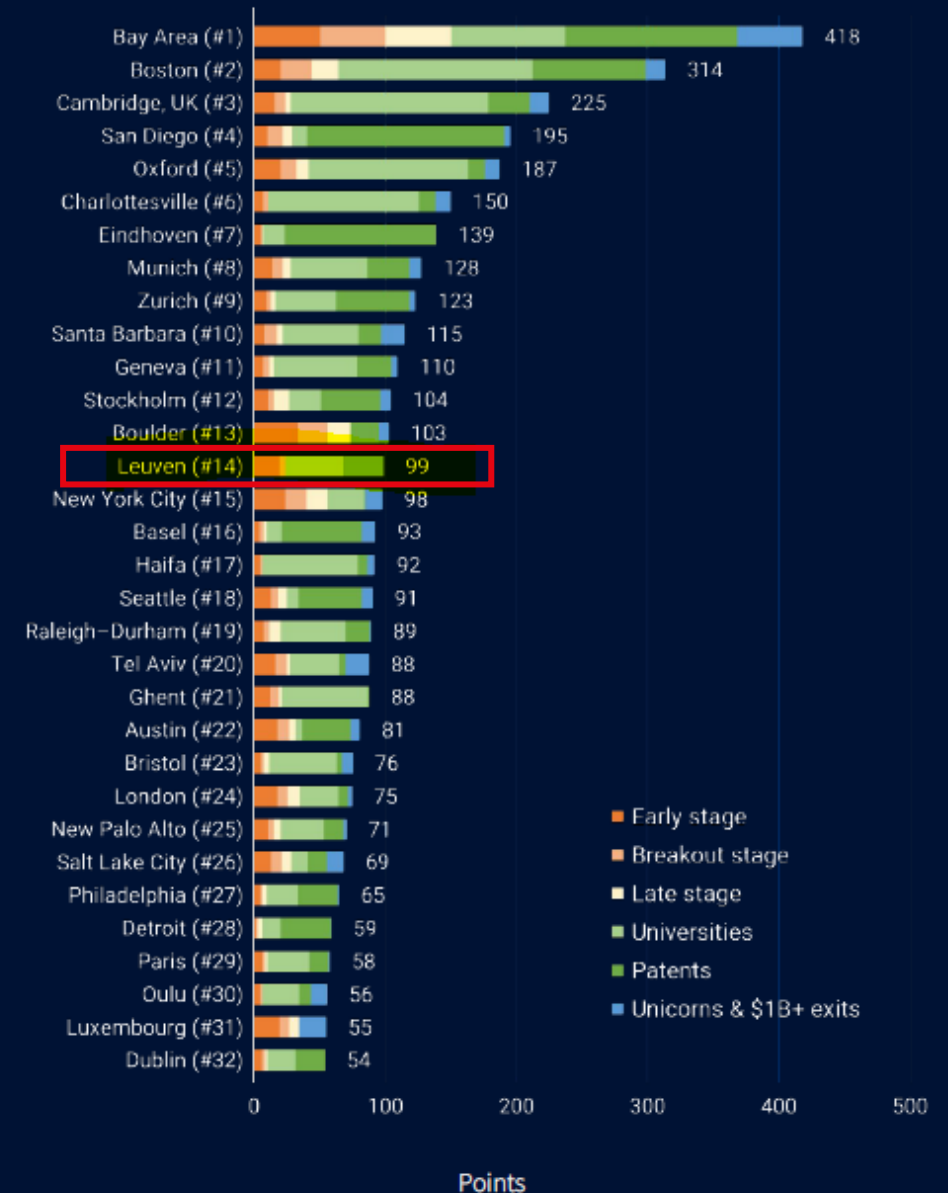
High output per inhabitant, driven by academic/research footprint. Strong universities-to-startups linkage.

Includes smaller cities like Oxford, Leuven, and Eindhoven.

Key for development of novel and cutting edge technology (Deep Tech).
Often some specialisation in specific domains, such as semiconductors or life sciences.

Top Science Hubs

[view all results »](#)



International
collaborations &
networks



*Atlas – bearer of the
world*



European
Reference
Networks



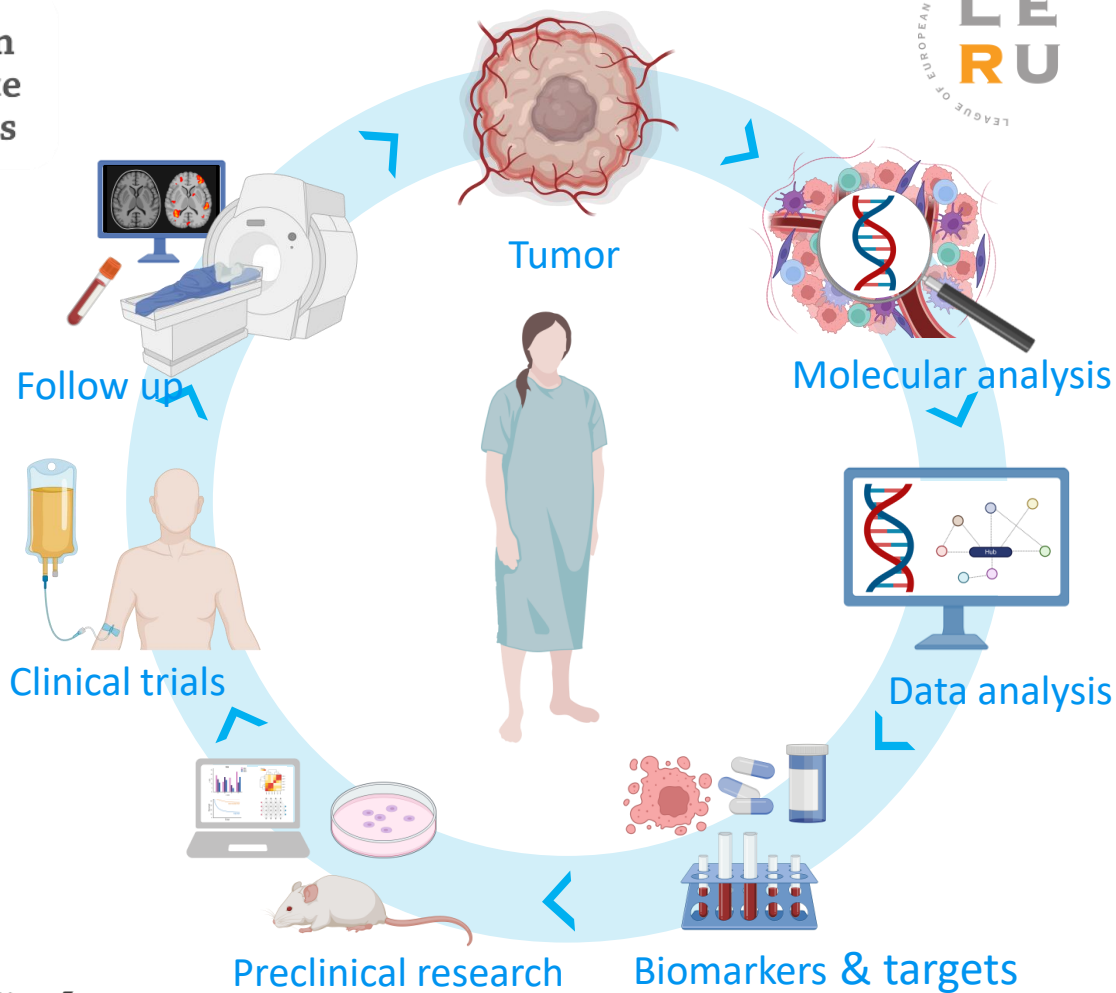
European
University Hospital
Alliance



EORTC
European Organisation for Research
and Treatment of Cancer

The future of cancer therapy

EurOPDX
Translating Knowledge in Oncology



Tumor

Molecular analysis

Data analysis

Biomarkers & targets

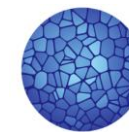
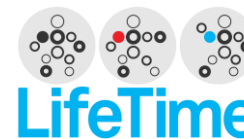
Preclinical research

Clinical trials

Follow up



European
Research
Council



HUMAN
CELL
ATLAS

AI FLANDERS

BUILDING OUR DIGITAL FUTURE

wellcometrust



CD3

CENTRE FOR
DRUG DESIGN
AND DISCOVERY



EUROPEAN
INVESTMENT
FUND



The K.U.Leuven Antibody Center

LEUVEN
CANCER INSTITUTE



International networking



CELSA: Central Europe Leuven Strategic Alliance



European University Hospital Alliance



National and international collaborations and networking



BeCRA
(Belgian Cancer Research Alliance)



inloophuis leuven



Belgian Cancer Registry

MEDVIA
The innovation cluster for better health

flanders.bio


VNZZ
(Vlaams Netwerk Zeldzame Ziekten)




at.las
Leveraging Affordable Solutions for Advanced Therapies




PROUD MEMBER OF
LEUVEN MINDGATE




ECI
Organisation of European Cancer Institutes – EEIG



European University Hospital Alliance




EUnetCCC
Funded by the European Union




JANE
EU JOINT ACTION
NETWORKS OF EXPERTISE ON CANCER


Academia:
Lille, Heidelberg,
....




Pharma: BMS, Gilead,
Daiichi, J&J....




EURACAN




www.genturis.eu



European Reference Network
for rare or low prevalence complex diseases



ebn
ERN | EuroBloodNet



Network Paediatric Cancer
(ERN PaedCan)

Societal impact –
Research
excellence with
purpose



***Gaia** – goddess representing
earth and all life, caring for the
broader world and its people*

Societal impact



Impact on (inter)national policy

- Lobbying w Ministry of Health for DRUP trial
- Driving force of development Belgian cancer research alliance - BECRA
- Participation in EU thinkthinks on the future of cancer research and care
- Participation in 4.UNCAN.eu, thinkthank for the EU 10yrs cancer research agenda



Patient education & empowerment

- Access to broad range of educational activities and materials
- Oncology patient panel



Impact on patient care

- Via results of multiple clinical trials
- International clinical guidelines
- Activities for the Belgian Cancer Registry
- LKI projects on improvement of quality of life serve as arguments for reimbursement
- 20 care programs being further developed or intensified



Outreach to a broader audience

Activities create awareness about:

- Need to donate
- Prevention
- Living with cancer
- Life after cancer
- Cancer literacy



thank
you



Prof. Dr. Johan Van Lint, MD PhD
Research Director LKI
Johan.Vanlint@kuleuven.be



UNITED AGAINST CANCER

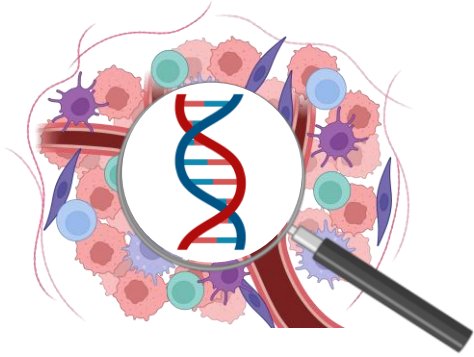
**Talent attraction
and HR excellence
in its commitment
to researcher
development**



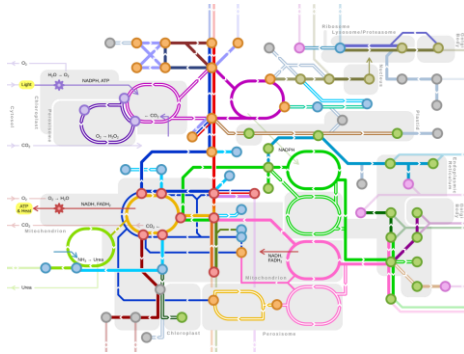
*Jason & the Argonauts –
assembling heroes from all
over Greece for a great quest*



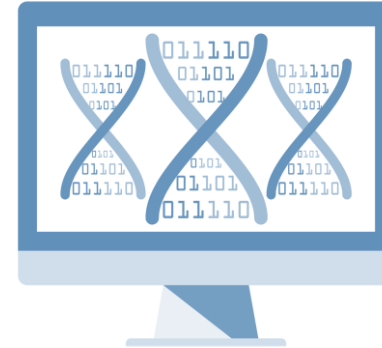
LKI – examples of some flagship research domains



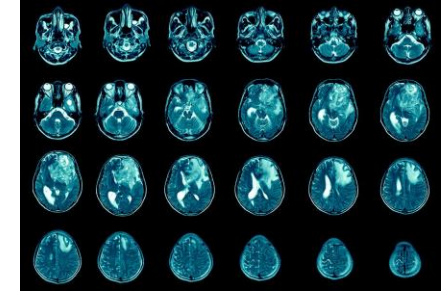
(spatial) multiomics analysis
of tumor microenvironment



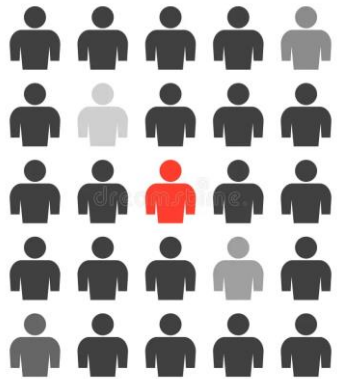
Cancer metabolism



Computational biology



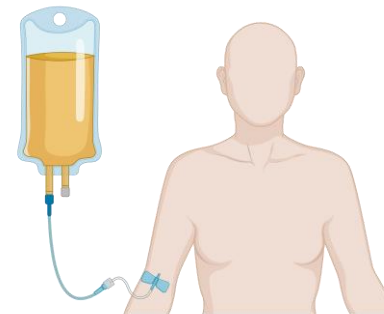
Medical imaging



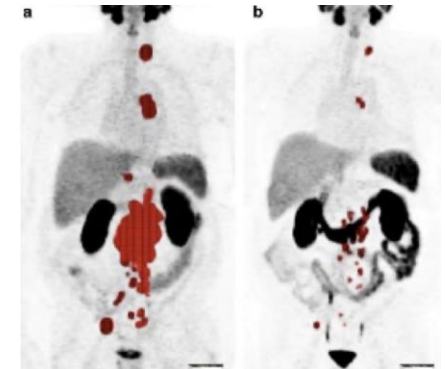
Rare cancers



Cancer in
pregnancy



Clinical trials



Nuclear medicine

Research Policy Plan 2022-2026

